

AMENDMENTS IN THE CLAIMS

Please amend the claims as follows.

1. (Original) A signal transmission apparatus in a mobile communication system, comprising:

a frame segmentation section for segmenting an input frame into k bit groups;

a first group of encoders for encoding the k bit groups and outputting encoded symbols;

a second group of encoders for encoding at least two bit groups among the k bit groups and outputting encoded symbols; and

a transmission section including a plurality of antennas in groups of a predetermined number of antennas, the number N of the antennas being larger than k , the transmission section transmitting the symbols encoded by each of the encoders in the second group via at least one antenna of the grouped antennas.

2. (Original) The signal transmission apparatus of claim 1, wherein the encoders are trellis encoders.

3. (Original) The signal transmission apparatus of claim 1, wherein the total sum N_k of numbers of antennas in the groups of antennas is larger than N .

4. (Original) A signal transmission method in a mobile communication system, comprising the steps of:

segmenting an input frame into k bit groups;

encoding, by a first group of encoders, the k bit groups and outputting encoded symbols;

encoding, by a second group of encoders, at least two bit groups among the k bit groups and outputting encoded symbols; and

grouping N antennas in groups of a predetermined number of antennas, N being larger than k , and transmitting symbols encoded by at least one encoder of the second group of encoders via at least one antenna of the grouped antennas.

5. (Original) The signal transmission method of claim 4, wherein the encoded symbols are symbols encoded by a trellis encoder.

6. (Original) The signal transmission method of claim 4, wherein the total sum N_k of numbers of antennas of the groups of antennas is larger than N .

7. (Currently Amended) A signal reception apparatus in a mobile communication system, comprising:

M antennas each connected to a different one of M receivers in groups of a predetermined number of receivers, each receiver outputting a reception symbol;

k decoders, k being smaller than M; and

a decomposer for decomposing at least one reception symbol of the M reception symbols output from the M receivers and outputting the decomposed symbol to at least two of the decoders into two groups of decomposed symbols, and outputting each decomposed symbol of the first group of decomposed symbols to a different decoder from a group of k decoders, and outputting each decomposed symbol of the second group of decomposed symbols to at least two different k decoders; and

k decoders, k being a less than the number of antennas M, each decoder receiving a decomposed symbol from the first group of decomposed symbols and a decomposed symbol from the second group of decomposed symbols, each decoder outputting a bit group..

8. (Original) The signal reception apparatus of claim 7, wherein the decoders are trellis decoders.

9. (Original) The signal reception apparatus of claim 7, wherein the antennas are in groups of a predetermined number of antennas.

10. (Currently Amended) A signal reception method in a mobile communication system, comprising the steps of:

receiving signals via M antennas connected to a different one of M receivers in groups of a predetermined number of receivers, each receiver outputting a reception symbol;

decomposing at least one reception symbol of M reception symbol output from different groups of receivers; and

outputting at least one the decomposed reception symbol of M reception symbols output from the receivers to at least two decoders of k decoders, k being smaller than M a first group of decomposed symbols to a different decoder from a group of k decoders, and outputting each decomposed symbol of a second group of decomposed symbols to at least two different ones of the decoders, each decoder outputting a bit group k being less than M.

11. (Original) The signal reception method of claim 10, wherein the decoders are trellis decoders.

12. (Original) The signal reception method of claim 10, wherein the antennas are in groups of a predetermined number of antennas.